

SEQUENCE LISTING

<110> Irvin, Randall T.
Hodges, Robert S.

<120> PSUEDOMONAS TREATMENT
COMPOSITION AND METHOD

<130> 8900-0008.30

<140> US 09/329,884

<141> 1999-06-11

<150> US 60/089,155

<151> 1998-06-12

<160> 22

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 387

<212> DNA

<213> Pseudomonas aeruginosa

<220>

<221> CDS

<222> (0)...(0)

<400> 1

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| ggtctcaaga | cgaaagttag | cgatatcttc | tctcaggatg | ggtcctgccc | ggctaatact | 120 |
| gctgccacgg | caggcatcga | gaaagatacc | gacatcaacg | gcaagtatgt | tgccaaggta | 180 |
| acaactgggtg | gcaccgcagc | tgcgtctggg | ggttgcaacta | tcgttgctac | tatgaaagcc | 240 |
| tctgatgtgg | ctactcctct | gagggggaaa | actctgactt | tgactctagg | aaatgctgac | 300 |
| aagggttctt | acacttgggc | ctgtacttcc | aacgcagata | acaagtacct | gccaaaaacc | 360 |
| tgccagactg | ctaccactac | cactccg | | | | 387 |

<210> 2

<211> 129

<212> PRT

<213> Pseudomonas aeruginosa

<400> 2

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Glu | Gly | Thr | Glu | Phe | Ala | Arg | Ala | Gln | Leu | Ser | Glu | Arg | Met |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Leu | Ala | Ser | Gly | Leu | Lys | Thr | Lys | Val | Ser | Asp | Ile | Phe | Ser | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asp | Gly | Ser | Cys | Pro | Ala | Asn | Thr | Ala | Ala | Thr | Ala | Gly | Ile | Glu | Lys |
| | | 35 | | | | 40 | | | | | | 45 | | | |
| Asp | Thr | Asp | Ile | Asn | Gly | Lys | Tyr | Val | Ala | Lys | Val | Thr | Thr | Gly | Gly |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Thr | Ala | Ala | Ala | Ser | Gly | Gly | Cys | Thr | Ile | Val | Ala | Thr | Met | Lys | Ala |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Ser | Asp | Val | Ala | Thr | Pro | Leu | Arg | Gly | Lys | Thr | Leu | Thr | Leu | Thr | Leu |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Gly | Asn | Ala | Asp | Lys | Gly | Ser | Tyr | Thr | Trp | Ala | Cys | Thr | Ser | Asn | Ala |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Asp | Asn | Lys | Tyr | Leu | Pro | Lys | Thr | Cys | Gln | Thr | Ala | Thr | Thr | Thr | Thr |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Pro | | | | | | | | | | | | | | | |

<210> 3
 <211> 369
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 3
 gcgctcgagg gtaccgaatt cgctcggttcg gaaggcgcat ctgctcttgc ttcgggtcaat
 60
 ccggttgaaga ctaccgttga agaggcgctt tctcgtgggt ggagcgtgaa gagcgggtaca
 120
 ggtacagagg acgctactaa gaaagagggt cctctggggg tggcggcaga tgctaacaaa
 180
 ctgggtacta tcgcactcaa acccgatcct gctgatggta ctgcagatat cactttgact
 240
 ttactatgg gcggtgcagg accgaagaat aaagggaaaa ttattaccct gactcgtact
 300
 gcagctgatg gtctctggaa gtgcaccagt gatcaggatg agcagtttat tccgaaaggt
 360
 tgctctagg
 369

<210> 4
 <211> 123
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 4
 Ala Leu Glu Gly Thr Glu Phe Ala Arg Ser Glu Gly Ala Ser Ala Leu
 1 5 10 15
 Ala Ser Val Asn Pro Leu Lys Thr Thr Val Glu Glu Ala Leu Ser Arg
 20 25 30
 Gly Trp Ser Val Lys Ser Gly Thr Gly Thr Glu Asp Ala Thr Lys Lys
 35 40 45
 Glu Val Pro Leu Gly Val Ala Ala Asp Ala Asn Lys Leu Gly Thr Ile
 50 55 60
 Ala Leu Lys Pro Asp Pro Ala Asp Gly Thr Ala Asp Ile Thr Leu Thr
 65 70 75 80
 Phe Thr Met Gly Gly Ala Gly Pro Lys Asn Lys Gly Lys Ile Ile Thr
 85 90 95
 Leu Thr Arg Thr Ala Ala Asp Gly Leu Trp Lys Cys Thr Ser Asp Gln
 100 105 110
 Asp Glu Gln Phe Ile Pro Lys Gly Cys Ser Arg
 115 120

<210> 5
 <211> 366
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> CDS
 <222> (0)...(0)

<400> 5
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 ccgctgaaga ccactgttga agagtcgctg tcgcgtggaa ttgctggtag caaaattaaa 120
 attggtacta ctgcttctac tgcgaccgaa acatatgccg gcgtcgagcc ggatgccaac 180
 aagttgggtg taattgctgt agcaatcgaa gatagtgggt cgggtgatat tacctttacc 240
 ttccagactg gtacctctag toccaagaat gctactaaag ttatcactct gaaccgtact 300
 gcggatgggg tctgggcttg taaatctacc caggatccga tgttcactcc gaaaggttct 360

<210> 6
 <211> 122
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 6
 Ala Leu Glu Gly Thr Glu Phe Ala Arg Ser Glu Gly Ala Ser Ala Leu
 1 5 10 15
 Ala Thr Ile Asn Pro Leu Lys Thr Thr Val Glu Glu Ser Leu Ser Arg
 20 25 30
 Gly Ile Ala Gly Ser Lys Ile Lys Ile Gly Thr Thr Ala Ser Thr Ala
 35 40 45
 Thr Glu Thr Tyr Ala Gly Val Glu Pro Asp Ala Asn Lys Leu Gly Val
 50 55 60
 Ile Ala Val Ala Ile Glu Asp Ser Gly Ala Gly Asp Ile Thr Phe Thr
 65 70 75 80
 Phe Gln Thr Gly Thr Ser Ser Pro Lys Asn Ala Thr Lys Val Ile Thr
 85 90 95
 Leu Asn Arg Thr Ala Asp Gly Val Trp Ala Cys Lys Ser Thr Gln Asp
 100 105 110
 Pro Met Phe Thr Pro Lys Gly Ser Asp Asn
 115 120

<210> 7
 <211> 381
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> CDS
 <222> (0)...(0)

<400> 7
 gcgctcgagg gtaccgaatt cgcccggtacc caggtgaccc gtgccgtgag tgaagtcagc 60
 gcgctgaaga ccgctgcgga gtcggcgatt ctggaaggga aggagattgt ttccagcgcg 120
 actcctaaag ataccagta tgacattggc ttcaccgagt ctactttgct agatgggtct 180
 ggtaagagtc agatccaggt aacggacaat aaagatggca ccgttgagtt ggctcgctacc 240
 ttgggtaaat cttctggttc cgccatcaaa ggggctgtaa tcaactgtttc gcgtaaaaaat 300
 gacggagtct ggaactgcaa aatcaccaaa actcctacag cttggaagcc caactacgct 360
 ccggctaatt gcccgattc c 381

<210> 8
 <211> 127
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 8
 Ala Leu Glu Gly Thr Glu Phe Ala Arg Thr Gln Val Thr Arg Ala Val
 1 5 10 15
 Ser Glu Val Ser Ala Leu Lys Thr Ala Ala Glu Ser Ala Ile Leu Glu
 20 25 30
 Gly Lys Glu Ile Val Ser Ser Ala Thr Pro Lys Asp Thr Gln Tyr Asp
 35 40 45
 Ile Gly Phe Thr Glu Ser Thr Leu Leu Asp Gly Ser Gly Lys Ser Gln
 50 55 60
 Ile Gln Val Thr Asp Asn Lys Asp Gly Thr Val Glu Leu Val Ala Thr
 65 70 75 80
 Leu Gly Lys Ser Ser Gly Ser Ala Ile Lys Gly Ala Val Ile Thr Val
 85 90 95
 Ser Arg Lys Asn Asp Gly Val Trp Asn Cys Lys Ile Thr Lys Thr Pro

100 105 110
 Thr Ala Trp Lys Pro Asn Tyr Ala Pro Ala Asn Cys Pro Asn Ser
 115 120 125

<210> 9
 <211> 381
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> CDS
 <222> (0)...(0)

<400> 9
 gcgctcgagg gtaccgaatt ctctcgctct caggtctcca gggttatggc ggaggctggc 60
 tccttgaaga ctgcagttga ggccctgctc caggatgggc gtactgctgt ggggtactgct 120
 gctgggtcaat gcgatccggg tgcgacgggt tccagtttgt tgactgggtgc ttctcagact 180
 tctcaaacc tgccaaccaa taccgggtgt ccgcagggtc tggatcctct gactactcaa 240
 accactatca ttgcgacttt tggtaacggc gcacccgcag ctatttcttg ccagactctg 300
 acctggactc gtgatgttaa tggtaggtgg agctgtgcta ctaccgtaga tgctaaattc 360
 cgtcctaattg gctgtactga c 381

<210> 10
 <211> 127
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 10
 Ala Leu Glu Gly Thr Glu Phe Ser Arg Ser Gln Val Ser Arg Val Met
 1 5 10 15
 Ala Glu Ala Gly Ser Leu Lys Thr Ala Val Glu Ala Cys Leu Gln Asp
 20 25 30
 Gly Arg Thr Ala Val Gly Thr Ala Ala Gly Gln Cys Asp Pro Gly Ala
 35 40 45
 Thr Gly Ser Ser Leu Leu Thr Gly Ala Ser Gln Thr Ser Gln Thr Leu
 50 55 60
 Pro Thr Asn Thr Gly Val Pro Gln Val Leu Asp Pro Leu Thr Thr Gln
 65 70 75 80
 Thr Thr Ile Ile Ala Thr Phe Gly Asn Gly Ala Ser Ala Ala Ile Ser
 85 90 95
 Gly Gln Thr Leu Thr Trp Thr Arg Asp Val Asn Gly Gly Trp Ser Cys
 100 105 110
 Ala Thr Thr Val Asp Ala Lys Phe Arg Pro Asn Gly Cys Thr Asp
 115 120 125

<210> 11
 <211> 507
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> CDS
 <222> (0)...(0)

<400> 11
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 atcgaagccc taaaggccga gatagaagca cttaaggcag agatcgaggc gctaaaagcg 120
 gaaatagagg ctctgaaggc aggcgggtgga ggagaattcg ctcggtcggg aggcgcactc 180
 gctcttgctt cgggtcaatcc gttgaagact accgttgaag aggcgctttc tctggtgttg 240
 agcgtgaaga gcggtacagg tacagaggac gctactaaga aagaggttcc tctgggggtg 300
 gcggcagatg ctaacaaaact ggggtactatc gcactcaaac ccgatcctgc tgatgggtact 360
 gcagatatca ctteagacttt cactatggggc ggtgcaggac cgaagaataa agggaaaatt 420

480
507

<400> 12

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<210> 13
<211> 507
<212> DNA
<213> Pseudomonas aeruginosa
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<220>
<221> CDS
<222> (0) ... (0)
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<400> 13

| | | | | | | |
|-------------|------------|-------------|------------|------------|------------|-----|
| gcgcctcgagc | accatcatca | ccatgggtggt | ggtggcgagg | tatccgcttt | agagaaagaa | 60 |
| gtttctgctc | tcgaaaaaga | ggtcagtgct | ctggaaaaag | agggtgcagc | cttggaaaag | 120 |
| gaagtatcag | cacttgagaa | gggcgggtgga | ggagaattcg | ctcgttcgga | aggcgcacat | 180 |
| gctcttgctt | cggccaatcc | gttgaagact | accgttgaag | aggcgctttc | tcgtgggttg | 240 |
| agcgtgaaga | gcggtacagg | tacagaggac | gctactaaga | aagaggttcc | tctgggggtg | 300 |
| gcggcagatg | ctaacaaact | gggtactatc | gcactcaaac | ccgatcctgc | tgatggtact | 360 |
| gcagatatca | ctttgacttt | cactatgggc | ggtgcaggac | cgaagaataa | agggaaaatt | 420 |
| attaccctga | ctcgatactg | agctgatggg | ctctggaagt | gcaccagtga | tcaggatgag | 480 |
| cagtttatcc | cgaaaagttg | ctctaagg | | | | 507 |

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<210> 14
<211> 169
<212> PRT
<213> Pseudomonas aeruginosa
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<400> 14

Ala Leu Glu His His His His His Gly Gly Gly Gly Glu Val Ser Ala
1 5 10 15
Leu Glu Lys Glu Val Ser Ala Leu Glu Lys Glu Val Ser Ala Leu Glu
20 25 30

Lys Glu Val Ser Ala Leu Glu Lys Glu Val Ser Ala Leu Glu Lys Gly
 35 40 45
 Gly Gly Gly Glu Phe Ala Arg Ser Glu Gly Ala Ser Ala Leu Ala Ser
 50 55 60
 Val Asn Pro Leu Lys Thr Thr Val Glu Glu Ala Leu Ser Arg Gly Trp
 65 70 75 80
 Ser Val Lys Ser Gly Thr Gly Thr Glu Asp Ala Thr Lys Lys Glu Val
 85 90 95
 Pro Leu Gly Val Ala Ala Asp Ala Asn Lys Leu Gly Thr Ile Ala Leu
 100 105 110
 Lys Pro Asp Pro Ala Asp Gly Thr Ala Asp Ile Thr Leu Thr Phe Thr
 115 120 125
 Met Gly Gly Ala Gly Pro Lys Asn Lys Gly Lys Ile Ile Thr Leu Thr
 130 135 140
 Arg Thr Ala Ala Asp Gly Leu Trp Lys Cys Thr Ser Asp Gln Asp Glu
 145 150 155 160
 Gln Phe Ile Pro Lys Gly Cys Ser Arg
 165

<210> 15
 <211> 525
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> CDS
 <222> (0)...(0)

<400> 15
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 atcgaagccc taaaggccga gatagaagca cttaaggcag agatcgaggc gctaaaagcg 120
 gaaatagagg ctctgaaggc aggcggtgga ggagaattcg cacgcgctca gcttagcgaa 180
 cgcattgacc tggccagtgg tctcaagacg aaagtgaagc atatcttctc tcaggatggg 240
 tctgcccgg ctaatactgc tgccacggca ggcattcgaga aagataccga catcaacggc 300
 aagtattgtt ccaaggtaac aactggtggc accgcagctg cgtctggtgg ttgcactatc 360
 gttgctacta tgaaagcctc tgatgtggct actcctctga gggggaaaac tctgactttg 420
 actctaggaa atgctgacaa gggttcttac acttgggcct gtacttccaa cgcagataac 480
 aagtacctgc caaaaacctg ccagactgct accactacca ctccg 525

<210> 16
 <211> 175
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 16
 Ala Leu Glu His His His His His Gly Gly Gly Gly Glu Ile Glu Ala
 1 5 10 15
 Leu Lys Ala Glu Ile Glu Ala Leu Lys Ala Glu Ile Glu Ala Leu Lys
 20 25 30
 Ala Glu Ile Glu Ala Leu Lys Ala Glu Ile Glu Ala Leu Lys Ala Gly
 35 40 45
 Gly Gly Gly Glu Phe Ala Arg Ala Gln Leu Ser Glu Arg Met Thr Leu
 50 55 60
 Ala Ser Gly Leu Lys Thr Lys Val Ser Asp Ile Phe Ser Gln Asp Gly
 65 70 75 80
 Ser Cys Pro Ala Asn Thr Ala Ala Thr Ala Gly Ile Glu Lys Asp Thr
 85 90 95
 Asp Ile Asn Gly Lys Tyr Val Ala Lys Val Thr Thr Gly Gly Thr Ala
 100 105 110
 Ala Ala Ser Gly Gly Cys Thr Ile Val Ala Thr Met Lys Ala Ser Asp
 115 120 125
 Val Ala Thr Pro Leu Arg Gly Lys Thr Leu Thr Leu Thr Leu Gly Asn

130 135 140
 Ala Asp Lys Gly Ser Tyr Thr Trp Ala Cys Thr Ser Asn Ala Asp Asn
 145 150 155 160
 Lys Tyr Leu Pro Lys Thr Cys Gln Thr Ala Thr Thr Thr Thr Pro
 165 170 175

<210> 17
 <211> 525
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> CDS
 <222> (0)...(0)

<400> 17
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 gtttctgctc tcgaaaaaga ggtcagtgct ctggaaaaag aggtgtcagc cttggaaaag 120
 gaagtatcag cacttgagaa gggcggtgga ggagaattcg cacgcgctca gcttagcgaa 180
 cgcattgaccc tggccagtgg tctcaagacg aaagtgagcg atatcttctc tcaggatggg 240
 tcttgcccgg ctaatactgc tgccacggca ggcattcgaga aagataccga catcaacggc 300
 aagtatgttg ccaagtaac aactggtggc accgcagctg cgtctggtgg ttgcaactatc 360
 gttgctacta tgaaagcctc tgatgtggct actcctctga gggggaaaac tctgactttg 420
 actctaggaa atgctgacaa gggttcttac acttgggcct gtacttccaa cgcagataac 480
 aagtacctgc caaaaacctg ccagactgct accactacca ctccg 525

<210> 18
 <211> 175
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 18
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 Leu Glu Lys Glu Val Ser Ala Leu Glu Lys Glu Val Ser Ala Leu Glu
 20 25 30
 Lys Glu Val Ser Ala Leu Glu Lys Glu Val Ser Ala Leu Glu Lys Gly
 35 40 45
 Gly Gly Gly Glu Phe Ala Arg Ala Gln Leu Ser Glu Arg Met Thr Leu
 50 55 60
 Ala Ser Gly Leu Lys Thr Lys Val Ser Asp Ile Phe Ser Gln Asp Gly
 65 70 75 80
 Ser Cys Pro Ala Asn Thr Ala Ala Thr Ala Gly Ile Glu Lys Asp Thr
 85 90 95
 Asp Ile Asn Gly Lys Tyr Val Ala Lys Val Thr Thr Gly Gly Thr Ala
 100 105 110
 Ala Ala Ser Gly Gly Cys Thr Ile Val Ala Thr Met Lys Ala Ser Asp
 115 120 125
 Val Ala Thr Pro Leu Arg Gly Lys Thr Leu Thr Leu Thr Leu Gly Asn
 130 135 140
 Ala Asp Lys Gly Ser Tyr Thr Trp Ala Cys Thr Ser Asn Ala Asp Asn
 145 150 155 160
 Lys Tyr Leu Pro Lys Thr Cys Gln Thr Ala Thr Thr Thr Thr Pro
 165 170 175

<210> 19
 <211> 504
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> CDS

SECRET

| | | | | | | |
|------------|-------------|-------------|------------|-------------|------------|-----|
| gcgctcgagc | accatcatca | ccatgggtggt | ggtggcgaga | ttgaggccct | caaggctgaa | 60 |
| atcgaagccc | taaaggccga | gatagaagca | cttaaggcag | agatcgaggc | gctaaaagcg | 120 |
| gaaatagagg | ctctgaaggc | aggcgggtgga | ggagaattcg | cgcggttcgga | aggtgcttcg | 180 |
| gcgctggcga | cgatcaaccc | gctgaagacc | actgttgaag | agtcgctgtc | gcgtggaatt | 240 |
| gctggtagca | aaattaaaaa | tggctactact | gcttctactg | cgaccgaaac | atatgccggc | 300 |
| gtcgagccgg | atgccacaac | gttggggtgta | attgctgtag | caatcgaaaga | tagtggtgcg | 360 |
| ggtgatatta | ctctttacctt | ccagactggt | acctctagtc | ccaagaatgc | tactaaagtt | 420 |
| atcactctga | accgtactgc | ggatggggtc | tgggcttgta | aatctaccca | ggatccgatg | 480 |
| ttcactccga | aaggtttctga | taac | | | | 504 |

| | | | | | | | | | | | | | | | |
|----------|---------|---------|---------|---------|-----|---------|---------|--------|---------|---------|--------|-----|---------|--------|---------|
| <400> 20 | | | | | | | | | | | | | | | |
| Ala 1 | Leu | Glu | His | His 5 | His | His | His | Gly | Gly 10 | Gly | Gly | Glu | Ile | Glu 15 | Ala |
| Leu | Lys | Ala | Glu 20 | Ile | Glu | Ala | Leu | Lys 25 | Ala | Glu | Ile | Glu | Ala 30 | Leu | Lys |
| Ala | Glu | Ile 35 | Glu | Ala | Leu | Lys 40 | Ala | Glu | Ile | Glu | Ala 45 | Leu | Lys | Ala | Gly |
| Gly | Gly 50 | Gly | Glu | Phe | Ala | Arg 55 | Ser | Glu | Gly | Ala 60 | Ser | Ala | Leu | Ala | Thr |
| Ile 65 | Asn | Pro | Leu | Lys 70 | Thr | Thr | Val | Glu | Glu 75 | Ser | Leu | Ser | Arg | Gly 80 | Ile |
| Ala | Gly | Ser | Lys 85 | Ile | Lys | Ile | Gly | Thr 90 | Thr | Ala | Ser | Thr | Ala 95 | Thr | Glu |
| Thr | Tyr | Ala | Gly 100 | Val | Glu | Pro | Asp 105 | Ala | Asn | Lys | Leu | Gly | Val 110 | Ile | Ala |
| Val | Ala | Ile 115 | Glu | Asp | Ser | Gly 120 | Ala | Gly | Asp 125 | Ile | Thr | Phe | Thr 130 | Phe | Gln |
| Thr | Gly 130 | Thr | Ser | Ser | Pro | Lys 135 | Asn | Ala | Thr | Lys 140 | Val | Ile | Thr 145 | Leu | Asn |
| Arg 145 | Thr | Ala | Asp | Gly 150 | Val | Trp | Ala | Cys | Lys | Ser 155 | Thr | Gln | Asp | Pro | Met 160 |
| Phe | Thr | Pro | Lys | Gly 165 | Ser | Asp | Asn | | | | | | | | |

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<220>
<221> CDS
<222> (0) ... (0)
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8

<210> 22
 <211> 168
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 22
 Ala Leu Glu His His His His His Gly Gly Gly Gly Glu Val Ser Ala
 1 5 10 15
 Leu Glu Lys Glu Val Ser Ala Leu Glu Lys Glu Val Ser Ala Leu Glu
 20 25 30
 Lys Glu Val Ser Ala Leu Glu Lys Glu Val Ser Ala Leu Glu Lys Gly
 35 40 45
 Gly Gly Gly Glu Phe Ala Arg Ser Glu Gly Ala Ser Ala Leu Ala Thr
 50 55 60
 Ile Asn Pro Leu Lys Thr Thr Val Glu Glu Ser Leu Ser Arg Gly Ile
 65 70 75 80
 Ala Gly Ser Lys Ile Lys Ile Gly Thr Thr Ala Ser Thr Ala Thr Glu
 85 90 95
 Thr Tyr Ala Gly Val Glu Pro Asp Ala Asn Lys Leu Gly Val Ile Ala
 100 105 110
 Val Ala Ile Glu Asp Ser Gly Ala Gly Asp Ile Thr Phe Thr Phe Gln
 115 120 125
 Thr Gly Thr Ser Ser Pro Lys Asn Ala Thr Lys Val Ile Thr Leu Asn
 130 135 140
 Arg Thr Ala Asp Gly Val Trp Ala Cys Lys Ser Thr Gln Asp Pro Met
 145 150 155 160
 Phe Thr Pro Lys Gly Ser Asp Asn
 165

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